Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of detecting the presence or measuring the quantity of a target analyte in a sample reagent comprising: contacting a microfabricated electrochemical biosensor with the sample reagent, the microfabricated electrochemical biosensor comprising: (a) a substrate; and (b) at least two electrically conductive electrodes fabricated on the substrate by integrated circuit technology, each of the electrical conductive electrodes consisting of a single layer of an electrically conductive material; containing the sample reagent in contact with the conducting electrodes; measuring a electrical signal output from the microfabricated electrochemical biosensor; and determining from the signal output the presence and/or quantity of the target analyte in the sample reagent.

2. (Previously Presented) The method of claim 1, wherein the electrochemical biosensor includes an adhesive underneath each of the electrodes, the adhesive allowing for better adhesion of each of the electrodes to the substrate.

3. (Previously Presented) The method of claim 1, wherein the sample reagent is a biological fluid containing macromolecules.

4 (Previously Presented) The method of claim 1, wherein the sample reagent is a biological fluid containing ionic molecules or atoms.

5. (Previously Presented) The method of claim 1, wherein the substrate is selected from the group consisting of silicon, gallium arsenide, plastic and glass.

6. (Previously Presented) The method of claim 1, wherein the substrate comprises a material made out of silicon.

7. (Previously Presented) The method of claim 1, wherein the electrically conductive material is selected from the group consisting of gold, aluminum, chromium, copper, platinum, titanium, nickel and titanium.

8. (Previously Presented) The method of claim 1, wherein the electrically conductive material is gold.

9. (Previously Presented) The method of claim 2, wherein the adhesive is selected from the group of consisting of chromium, titanium, and glue.

10. (Previously Presented) The method of claim 2, wherein the adhesive comprises chromium.

11. (Previously Presented) The method of claim 1, wherein the substrate further comprises a well structure containing at least one of the electrodes.

12. (Previously Presented) The method of claim 1, wherein the electrochemical biosensor comprises at least three electrically conductive electrodes.

13. (Previously Presented) The method of claim 12, wherein each of the electrically conductive electrodes consists of a single layer of gold.

14. (Previously Presented) The method of claim 1, wherein the step of determining from the signal output the presence and/or quantity of the target analyte in the reagent further comprises: calibrating the electrochemical biosensor with a first calibrating solution that contains a known amount of the target analyte to be detected and a second calibrating solution that contains an undetectable amount of the target analyte to be detected; obtaining a reference signal output; and comparing the reference signal with the measured signal to determine the presence and/or quantity of the molecules in the sample reagent.

15. (Previously Presented) The method of claim 14, wherein the substrate is selected from the group consisting of silicon, gallium arsenide, plastic and glass.

16. (Previously Presented) The method of claim 14, wherein the electrically conductive material is selected from the group consisting of gold, aluminum, chromium, copper, platinum, nickel and titanium.

17. (Previously Presented) The method of claim 14, wherein the electrically conductive material is gold.

18. (Previously Presented) The method of claim 14, wherein the adhesive is selected from the group of material consisting of chromium, titanium, and glue.

19. (Previously Presented) The method of claim 14, wherein the substrate further comprises a well structure underneath at least one of the electrodes.

20. (Previously Presented) The method of claim 14, wherein a surface on at least one of the electrodes is surface modified for anchoring macromolecules on the surface.

51. (Previously Presented) The method of claim 1, wherein the electrodes are in contact with the substrate.

52. (Previously Presented) The method of claim 1, wherein the electrically conductive material associated with each electrode extends from each electrode to an electrical pad positioned on the substrate.

53.-74. (Canceled)

75. (New) The method of claim 1, wherein each of the electrodes is constructed of the same materials.

76. (New) The method of claim 75, wherein the biosensor includes at least three electrically conductive electrodes.

77. (New) The method of claim 75, wherein each of the electrodes has a different shape.

78. (New) The method of claim 77, wherein the biosensor includes at least three electrically conductive electrodes.

79. (New) The method of claim 77, wherein the sample reagent is in direct contact with the at least two electrically conductive electrodes.

80. (New) The method of claim 1, wherein each of the at least two electrically conductive electrodes is exposed to the atmosphere before the sample reagent is contacted with the sample reagent.

81. (New) The method of claim 1, wherein the sample reagent is a liquid.

82. (New) The method of claim 81, wherein contacting the microfabricated electrochemical biosensor with the sample reagent includes forming a drop of the sample reagent over the electrodes.